



# **Flood Control District of Maricopa County**

## **Flood Control Advisory Board**

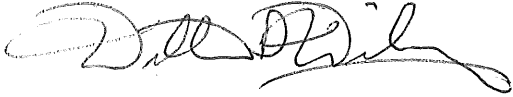
**Notice of Meeting for June 28, 2017**

### **NOTICE OF MEETING OF THE FLOOD CONTROL ADVISORY BOARD**

Pursuant to A.R.S. 38-431.02, notice is hereby given to the general public that the Flood Control Advisory Board (FCAB) will hold a meeting open to the public on Wednesday, June 28, 2017 at 2:00 p.m., in the Adobe Conference Room of the Flood Control District located at 2801 West Durango Street in Phoenix. Matters on the agenda may be discussed in executive session for the purpose of obtaining advice thereon.

The agenda is as follows:

- 1) Call to Order
- 2) Pledge of Allegiance
- 3) Approval of the Minutes: May 24, 2017 FCAB Meetings
- 4) **Action Item** – Mandan Street Drainage Improvements, Resolution FCD2017R002. ***Staff recommends the following action:*** The Flood Control Advisory Board endorse and recommend that the Board of Directors adopt Resolution FCD2017R002 for the Mandan Street Drainage Improvements. Presented by: Mike Duncan, Project Manager
- 5) **Information and discussion item only.** Small Project Assistance Program (SPAP). *No formal action is required.* Presented by: Kim Belt, CIP Program Manager
- 6) **Information and discussion item only.** 2017 Monsoon Outlook. *No formal action is required.* Presented by: Daniel Henz, Meteorologist
- 7) **Information and discussion item only.** Comments from the Chief Engineer and General Manager. *No formal action is required.* Presented by: William D. Wiley, P.E., Chief Engineer and General Manager
- 8) **Information and discussion item only.** Summary of Recent Actions by the Board of Directors. *No formal action is required.* Presented by: William D. Wiley, P.E., Chief Engineer and General Manager
- 9) **Information and discussion item only.** Other Business and Comments from the Public. *No action will be taken.*

A handwritten signature in black ink, appearing to read 'William D. Wiley', with a stylized, flowing script.

William D. Wiley, P.E.  
Chief Engineer and General Manager

June 13, 2017

**NOTE:** *A sign language interpreter will be made available upon request with 72-hours notice. Alternative format materials or FM or Infrared Listening Devices are also available upon request with 72-hours notice. Additional reasonable accommodations will be made available to the extent possible within the time frame of the request.*

**Flood Control  
Advisory Board**

# **WELCOME**

**June 28, 2017**



# Agenda

- Call to Order
- Pledge of Allegiance
- Approval of the 5-24-2017 FCAB Meeting Minutes
- Mandan Street Drainage Improvements, Resolution FCD2017R002
- Small Project Assistance Program (SPAP)
- 2017 Monsoon Outlook
- Comments from the Chief Engineer and General Manager
- Summary of Recent Actions by the Board of Directors
- Other Business and Comments from the Public





# **Mandan Street Drainage Improvements**

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**Resolution FCD 2017R002**

**Doug Williams, AICP**

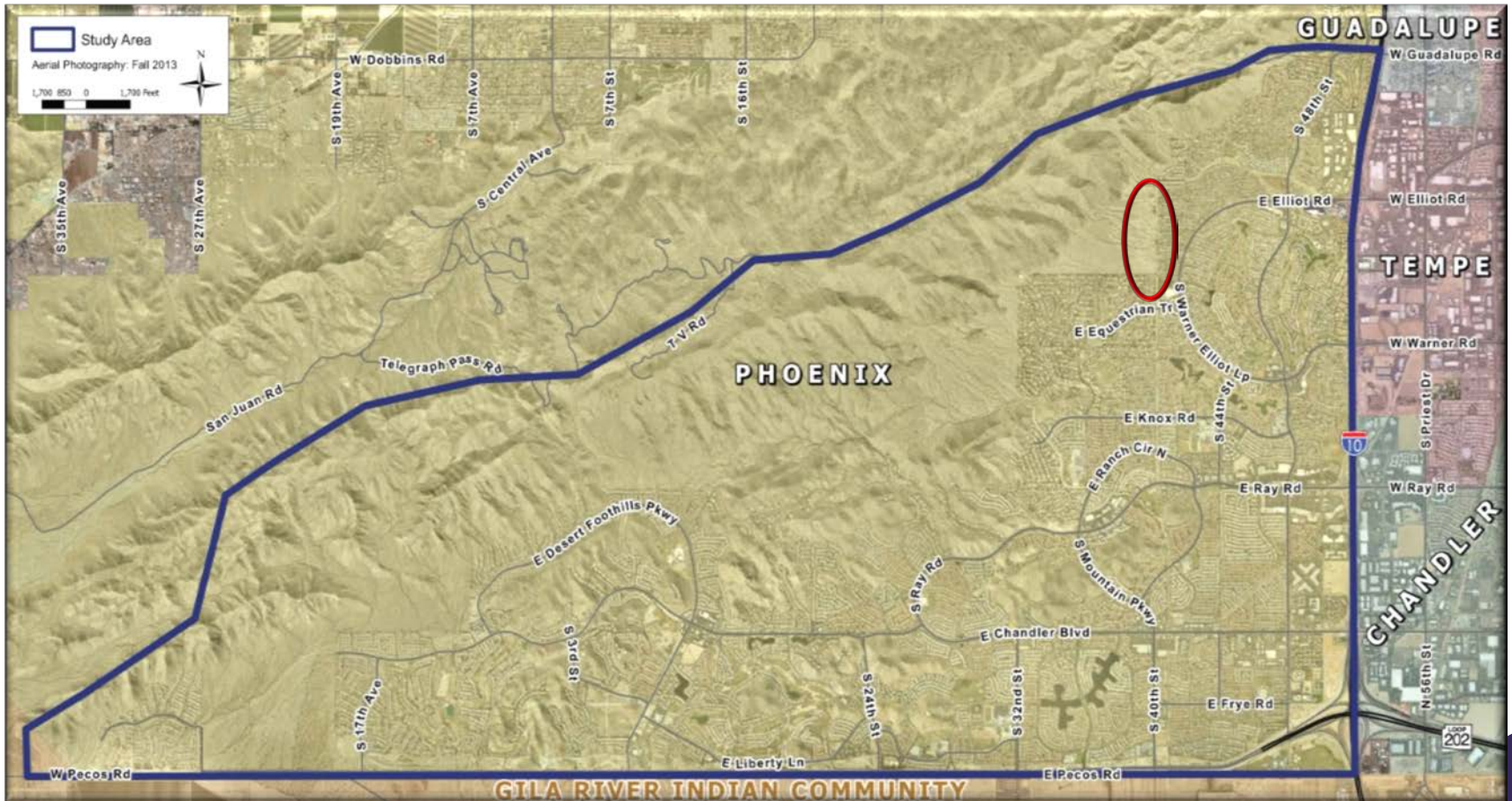
*Planning Branch Manager*

# Action Item

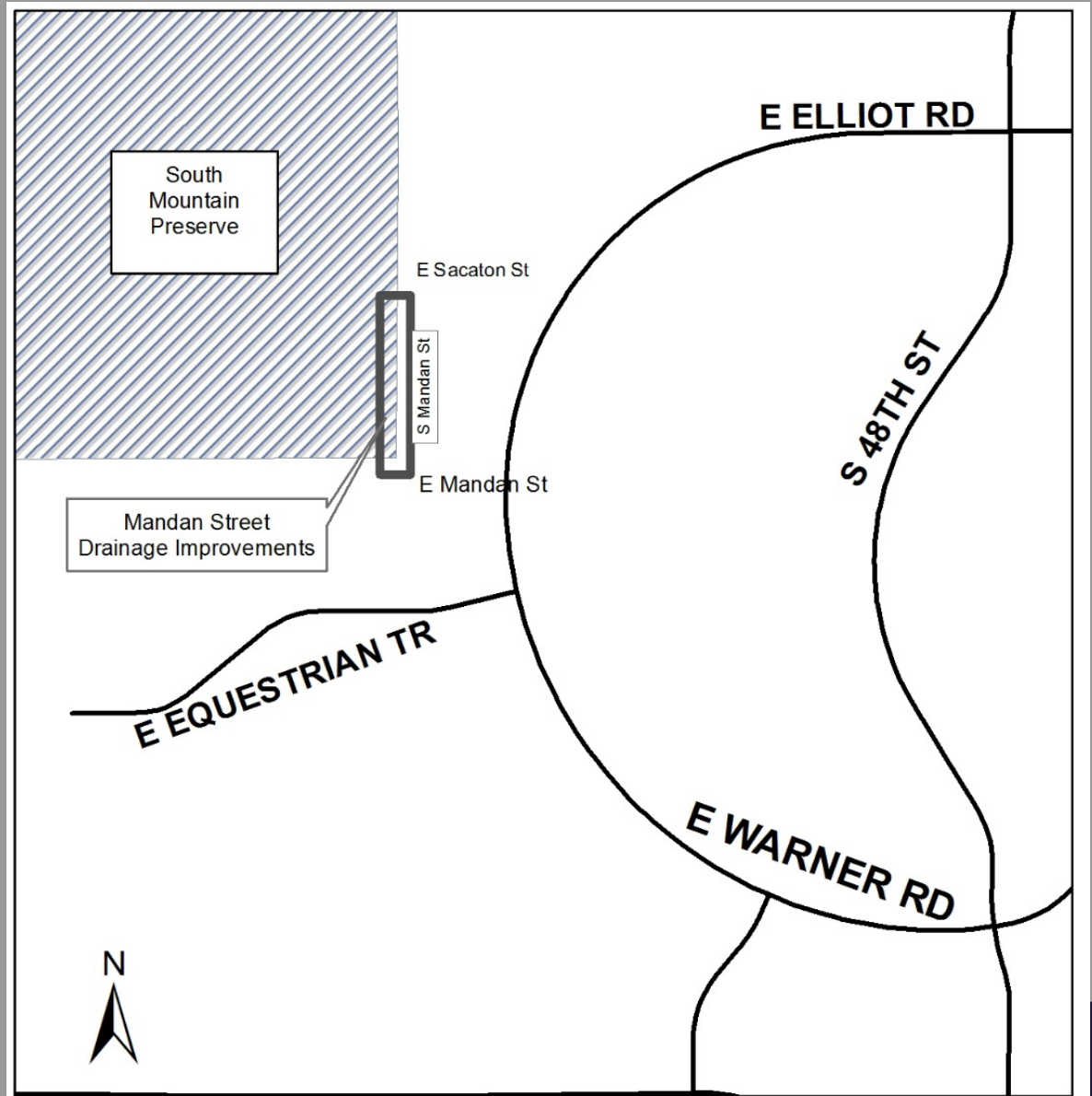
Advisory Board endorse and recommend to the Board of Directors approval of Resolution FCD 2017R002 for Mandan Street Drainage Improvements.

# South of South Mountain

The watershed of the Ahwatukee Foothills Master Study



# Corridor of the Mandan Street Project



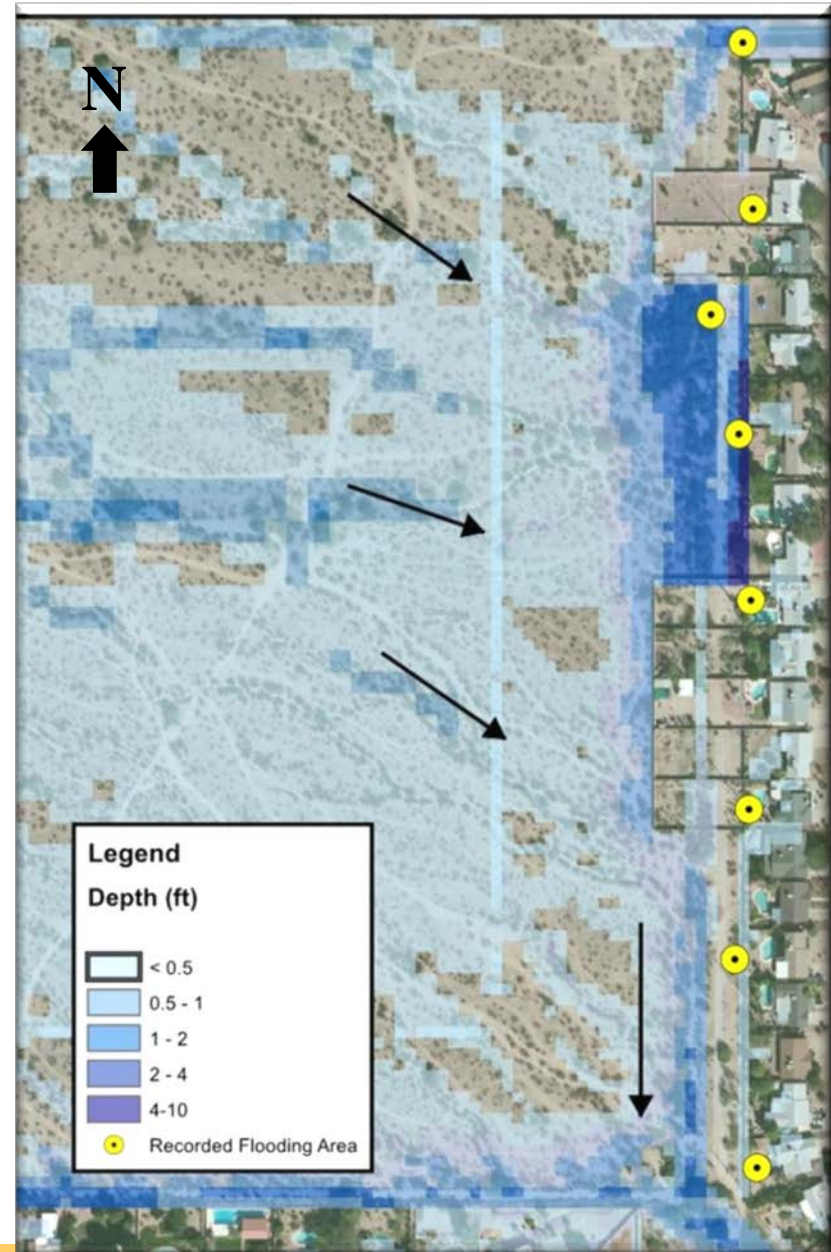


# Modeled flood depths

Flood ponding at several properties

Some residents have been flooded more than once  
**(up to \$68k damage)**

\$182k total damage  
anticipated in a 100-year  
storm

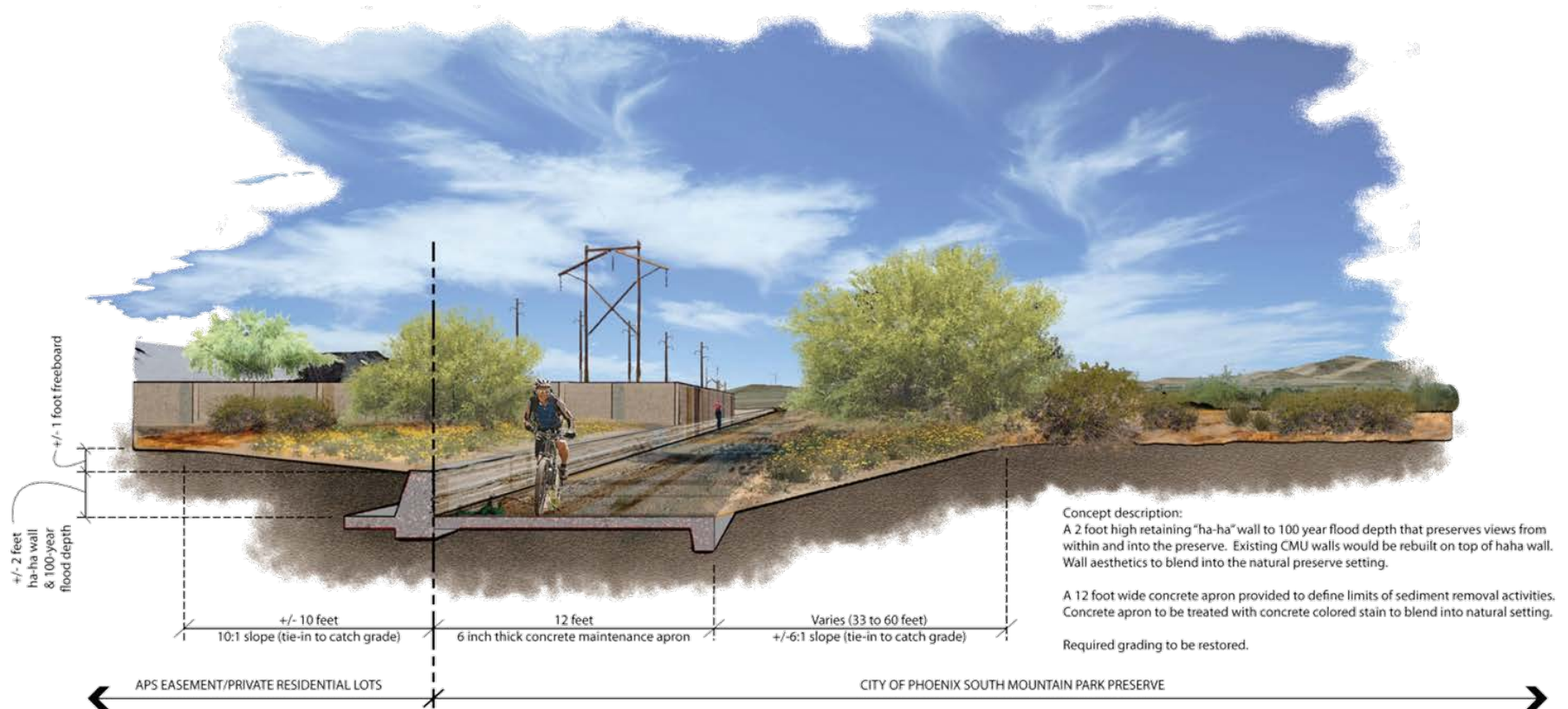


# Flood Damage to Homes



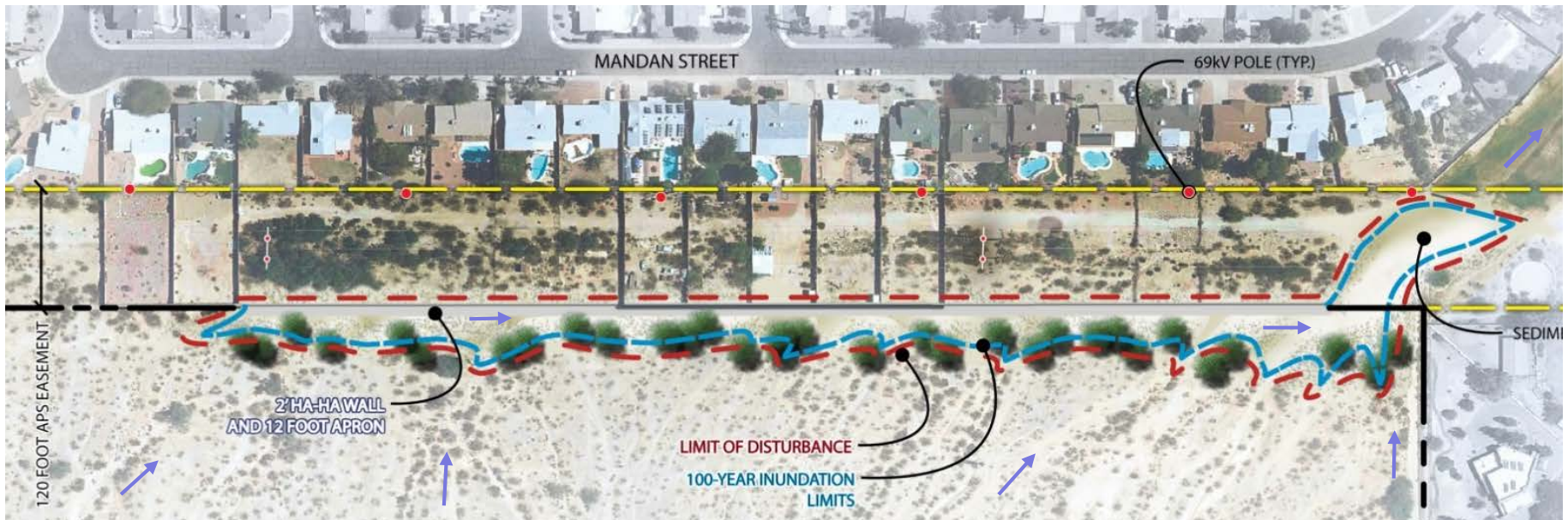


## Short “Ha-ha” wall with concrete apron



# Plan View - Collection and Diversion

N ←



- Project concept was presented to and approved by the City of Phoenix Parks and Recreation Board on April 28, 2017



- State and Federal Grant applications have been made for this project. The grant selections are pending.



- Project cost estimate: \$1.3 million

# Action Requested

Endorse and recommend that  
the Board of Directors approve  
Resolution FCD 2017R002 for the  
Mandan Street Drainage Improvements

# Questions...







# Small Project Assistance Program (SPAP)

**Kim Belt, CPM**

*Capital Improvement Program Supervisor*



# SPAP Purpose

- Facilitate the mitigation of flood hazards that are local in nature, but pose a risk to the citizens and property of Maricopa County
- Using consistent, published criteria, objectively evaluate submitted local flood control capital projects requested by municipalities, the District or by non-municipalities or agencies
- Allow for the rapid implementation of recommended local flood control capital projects with minimal administrative delay



# SPAP Process and Timeline

- Announcements for the next fiscal year program sent to agencies in mid-August of each year
- Agency submittals are due the First Friday of October
- Review by Flood Control Staff
- Recommendations submitted to CE & GM for approval
- Status notifications sent to Applicants in October/November timeframe



# Project Examples



# Structure Flooding





# Structure Flooding



# Structure Flooding



# SPAP Submittal Requirements

- Proposal must include supporting documentation of structural flooding to residential and/or commercial properties, such as, photos or copies of flooding complaints.
- Proposal must produce an independent solution to mitigate a local drainage problem that has historically caused flooding to structures.
- Proposals shall not be split into multiple submittals within the same or across multiple fiscal years.
- Proposal must include a location map of flooded/benefitted structures.
- Proposal must include project concept detailing project elements.

## Small Project Assistance Program Scoring Matrix

Finite values are assigned to project evaluation questions as follows:

1. Smallest storm event that has flooded residential or commercial structures:

20	2-year
16	5-year
12	10-year
9	50-year
6	Greater than 50-year
0	No documented evidence of damage to residential or commercial structures

2. Number of residential or commercial structures that have historically been flooded:

20	Five or more
16	Four
12	Three
8	Two
4	One
0	Zero

3. Number of recorded storm events that have flooded residential or commercial structures:

15	Three or more
10	Two
5	One
0	Zero

4. Smallest storm event that has caused roadway or access closures:

15	2-year
10	5-year
5	10-year
0	No documented evidence of roadway or access closures during a 10-year or smaller event

5. If work towards final plans and specifications is underway/completed, indicate percent complete:

15	100%
12	90%
10	60%
3	30%
0	Less than 30%

6. Does the submitting municipality own all project rights-of-way or have necessary land rights in place?


10	Yes
0	No

7. Indicate municipality's priority assigned to this project (1, 2, 3, etc.) compared to its other submittals:

5	One
3	Two
0	Three or more



# SPAP FCD Obligations

- 
- The requesting municipality acts as lead agency for all activities
  - District contributions are limited to 75% of construction costs of flood control elements of the project, not to exceed \$250,000
  - District contributions are limited to project construction costs incurred during the fiscal year for which the project was submitted – subsequent and prior costs are the sole responsibility of the requesting municipality
  - The requesting municipality is responsible for all operations and maintenance and related costs associated with a completed project – District staff will not be available to assist with these efforts

# SPAP Project Submittals

Fiscal Year	# of Projects Submitted
2011	14
2012	10
2013	16
2014	14
2015	15
2016	16
2017	15
2018	15
Total	115

Note: Out of 115 Projects Submitted 72 were recommended. Project improvements directly benefited 542 structures prone to frequent flooding.

# SPAP Shared

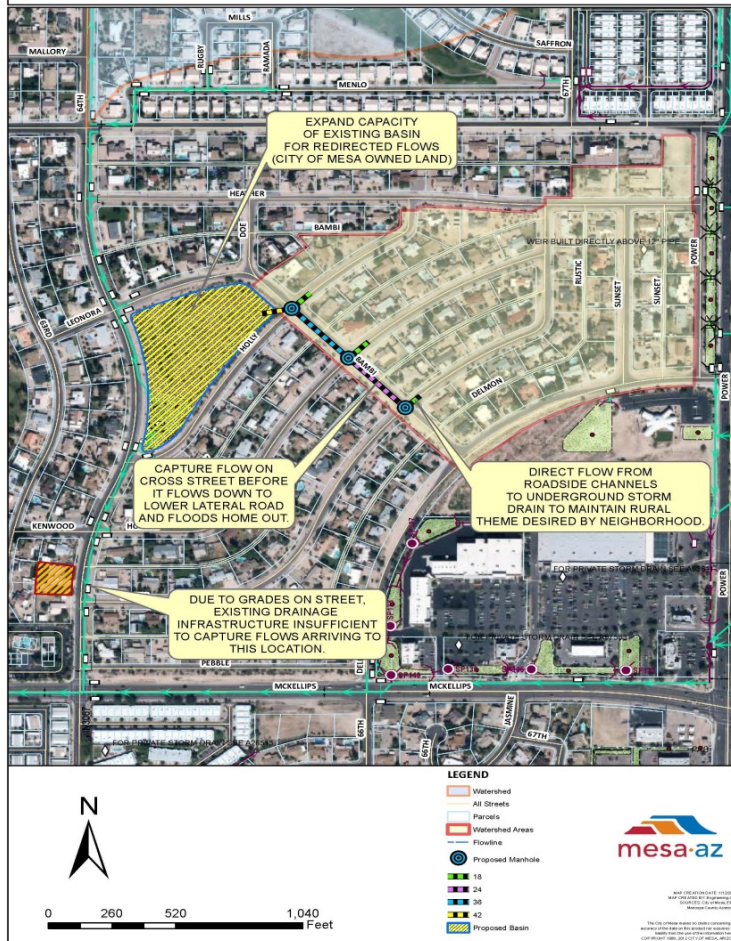
## Construction Costs

Fiscal Year	FCD \$	Partner \$	Total \$
2011	\$1,494,593	\$1,392,152	\$2,886,745
2012	\$1,690,006	\$ 954,981	\$2,644,987
2013	\$1,254,936	\$2,111,062	\$3,365,998
2014	\$1,193,943	\$1,313,560	\$2,507,503
2015	\$1,370,997	\$1,587,277	\$2,958,274
2016	\$2,960,833	\$3,575,363	\$6,536,196
2017	\$1,672,500*	\$1,647,790*	\$3,320,290*
2018	\$3,135,668*	\$3,276,693*	\$6,412,361*

\* Estimate – Construction not completed as of June 2017

# Proposal and Map Example

## FCDMC SPAP FY2018 - PROPOSED SOLUTION SKYVIEW DRAINAGE COM PROJECT NO. OT0060LSST



## FLOOD CONTROL DISTRICT'S SMALL PROJECT ASSISTANCE PROGRAM (REVIEWER)

[Home](#) [Fiscal Year Settings](#) [Proposals](#) [Users](#)

### AGENCY INFORMATION

Agency: City of Mesa  
Email: lance.webb@mesaaz.gov

### PROJECT INFORMATION

Edit this Section of the Proposal (Step 1)

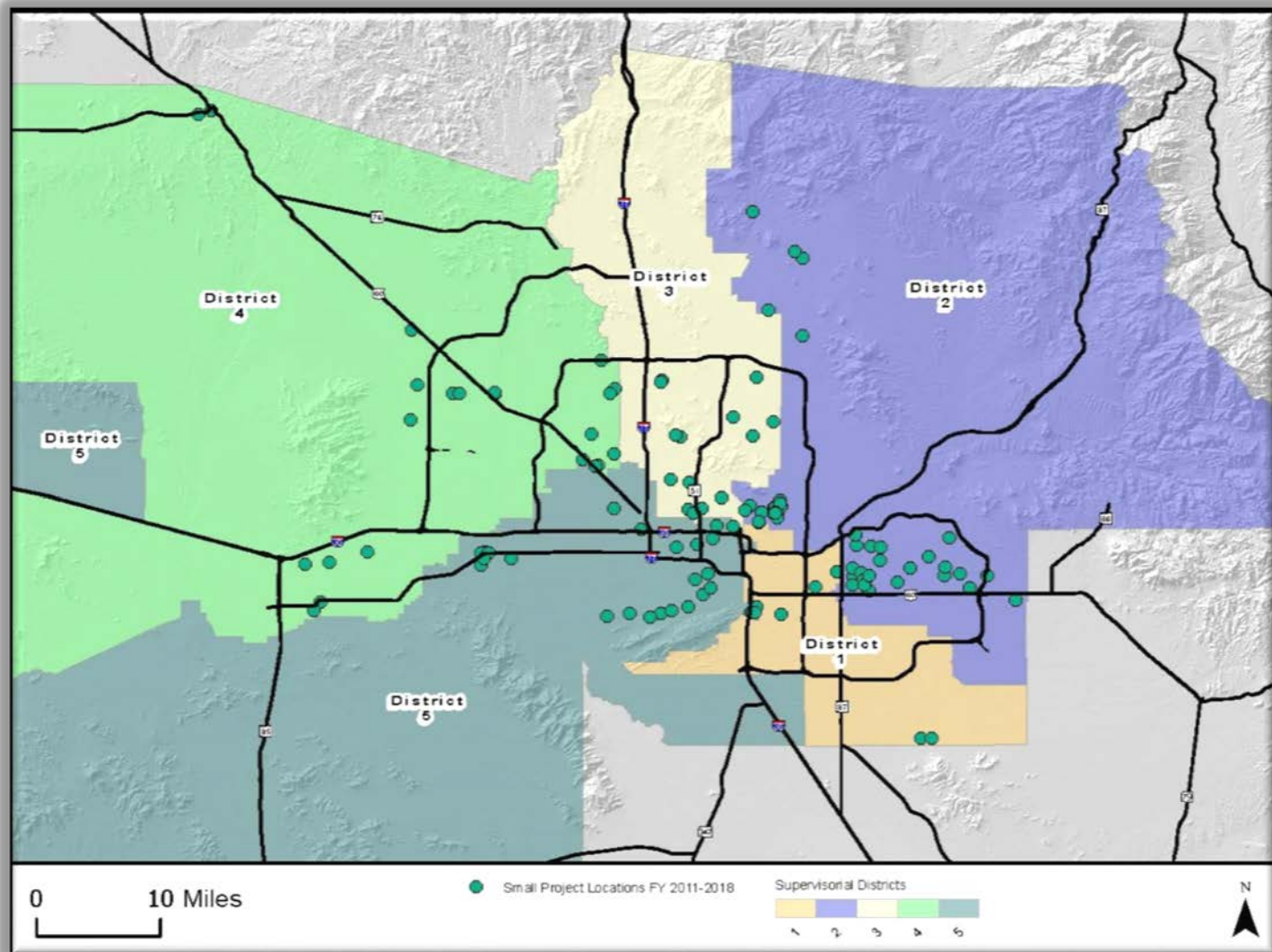
Project Name: Skyview Drainage  
Project Purpose: The purpose of this project is to expand the basin capacity of flows that arrive on a City of Mesa owned basin and capture flows and convey them to the basin with increased capacity, thus removing flows that otherwise flood a property owner downstream.  
Estimated Total Project Construction Cost: \$855,372.00  
Structural Project Components: None.

### PROJECT'S SCORE CARD

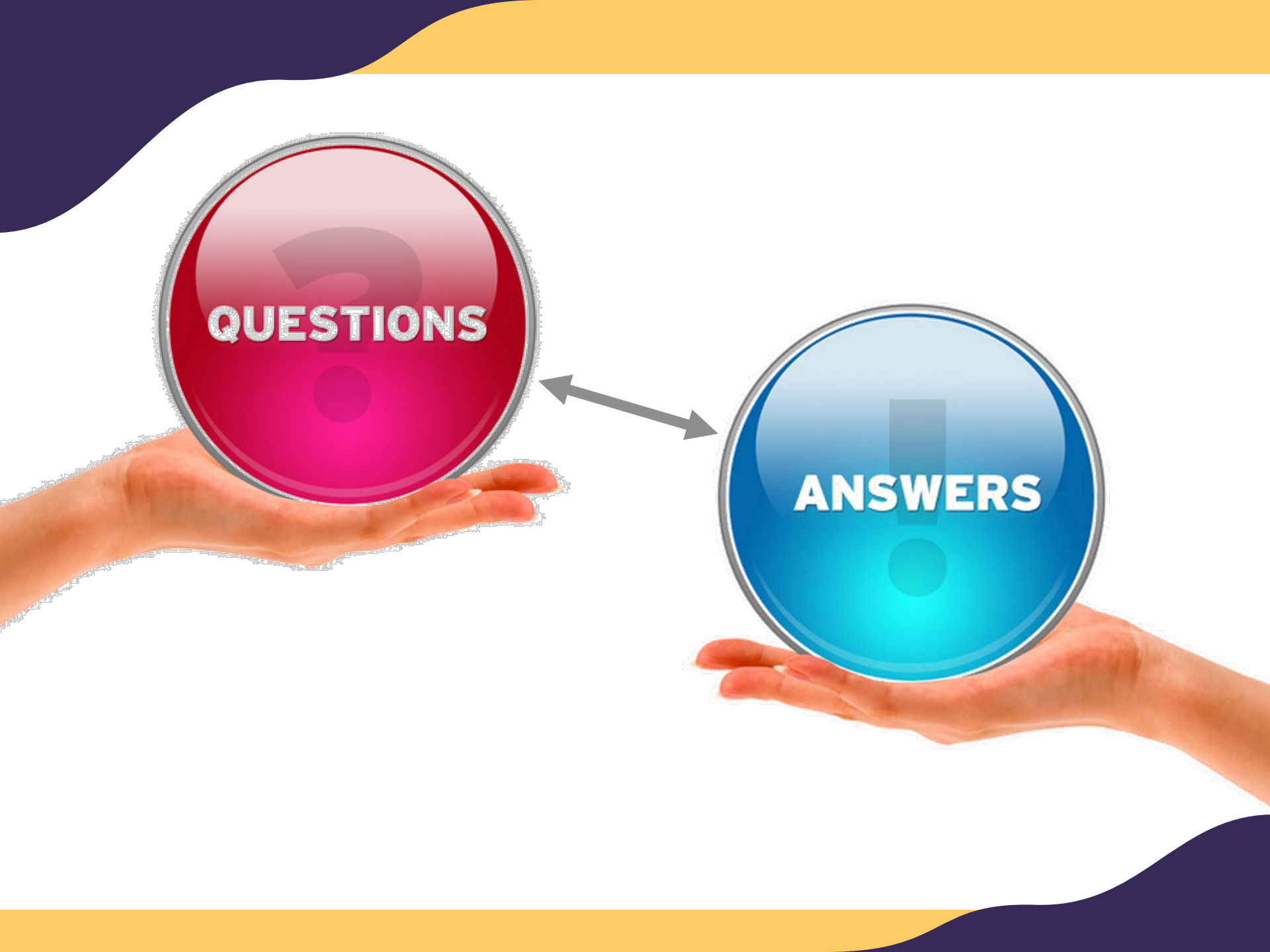
Edit this Section of the Proposal (Step 2)

Smallest storm event that has flooded residential or commercial structures (20 PT. MAX.): 10-year  
Number of residential or commercial structures that have historically been flooded (20 PT. MAX.): 1  
Number of recorded storm events that have flooded residential or commercial structures (15 PT. MAX.): 2  
Smallest storm event that has caused roadway or access closures due to flooding (15 PT. MAX.): 10-year  
If work towards final plans and specifications is underway/completed, indicate percent complete (15 PT. MAX.): 0  
Does the submitting municipality own all project rights-of-way or have necessary land rights (easement extending through project design life) in place (15 PT. MAX.): YES

# SPAP Map (Projects 2011-2018)







**QUESTIONS**

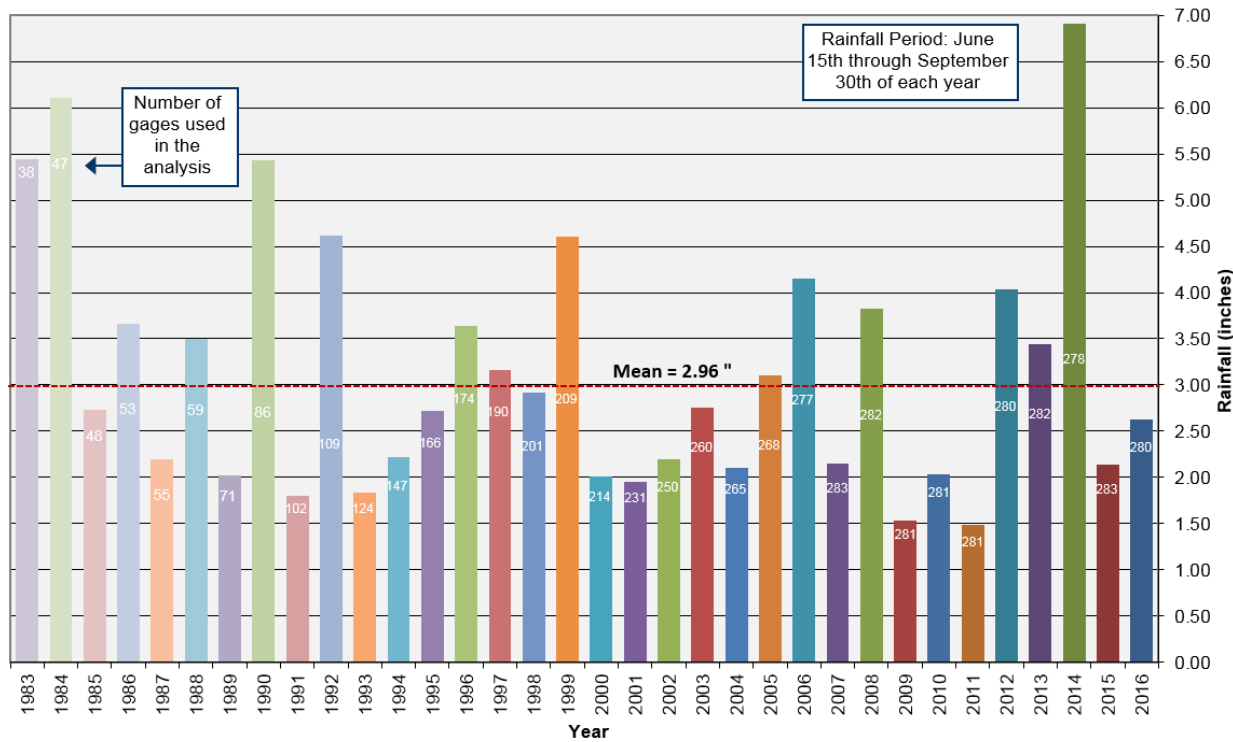
**ANSWERS**



# 2017 Monsoon Outlook

**Average Summer Thunderstorm Season Rainfall**

*Flood Control District of Maricopa County ALERT Rain Gages*



**Daniel Henz**  
Meteorologist

# When is the Monsoon...?

- Season "officially" runs from June 15<sup>th</sup> – September 30<sup>th</sup>
- Typical onset for PHX: July 7<sup>th</sup> (3 days Td > 55F) \*
- Typical end for PHX: Sept 9<sup>th</sup> \*
- Local Knowledge: On any given year, onset and end dates can be earlier or later by a couple of weeks for different parts of the state.

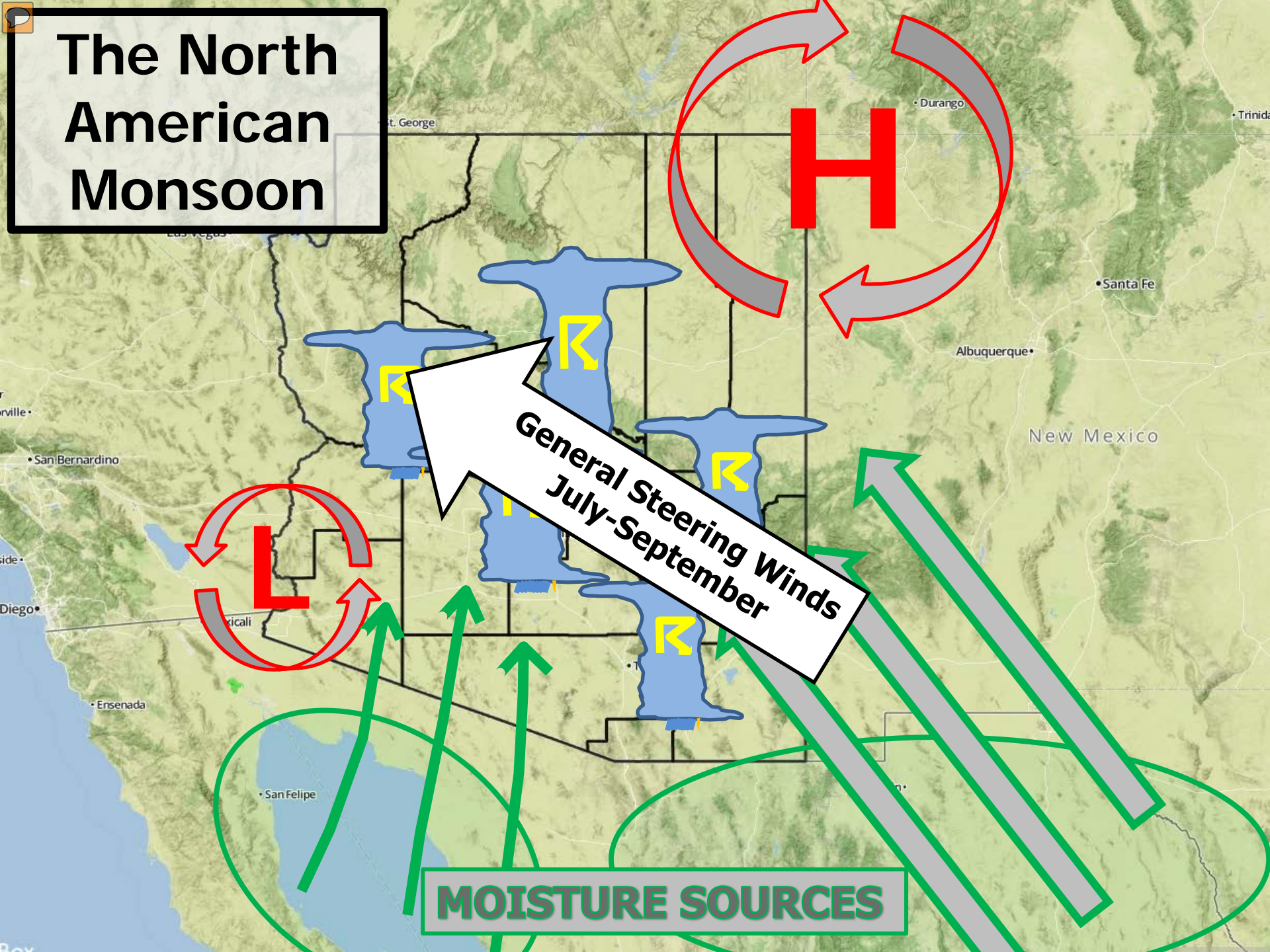


# Rainfall Stats...

- Avg. Season Rainfall: 2.71" (30%-40% of yearly total)
- Wettest Season: 9.56"/1984, Driest Season: 0.35"/1924
- Avg. days with Rain: 11 (max 17, min 5, since 2000)
- 2016 season rainfall: 2.49" – Considered near normal...  
*(When averaged across ALERT gages, 2.63", same outcome)*

*All information above is taken from Phoenix Sky Harbor Airport. Official reporting location for the Valley*

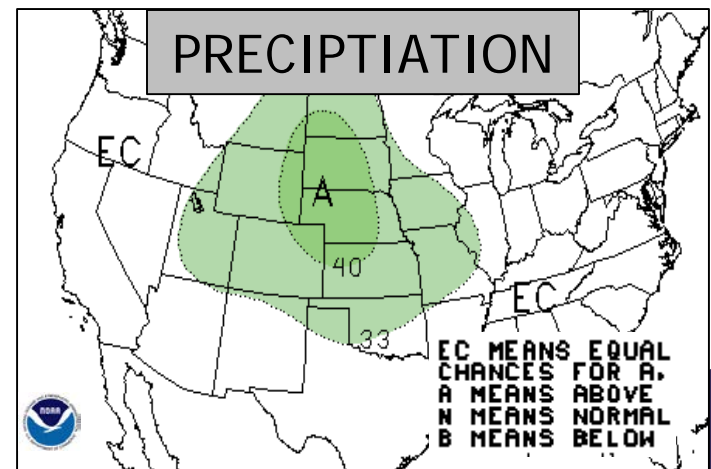
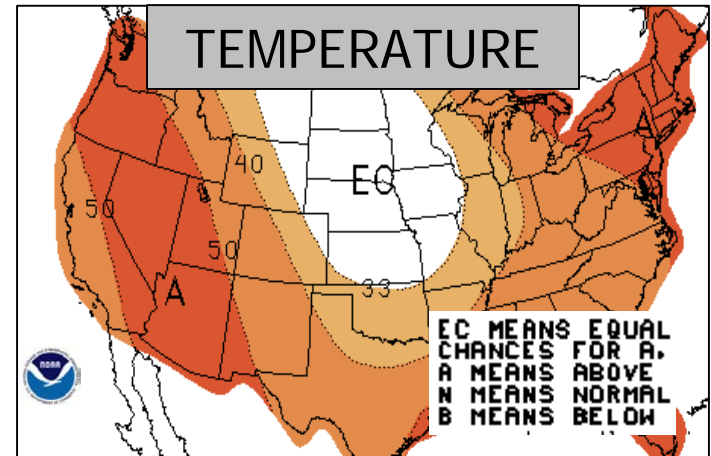
# The North American Monsoon



# NOAA/CPC 3-Month Outlook (Summer 2017)

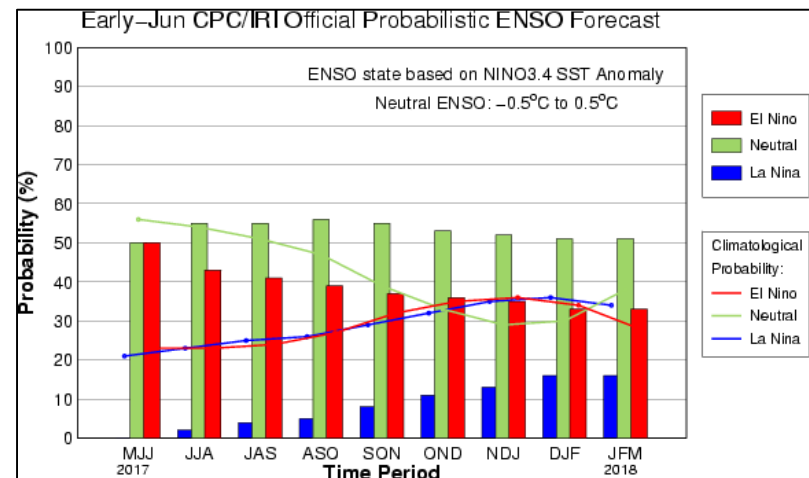
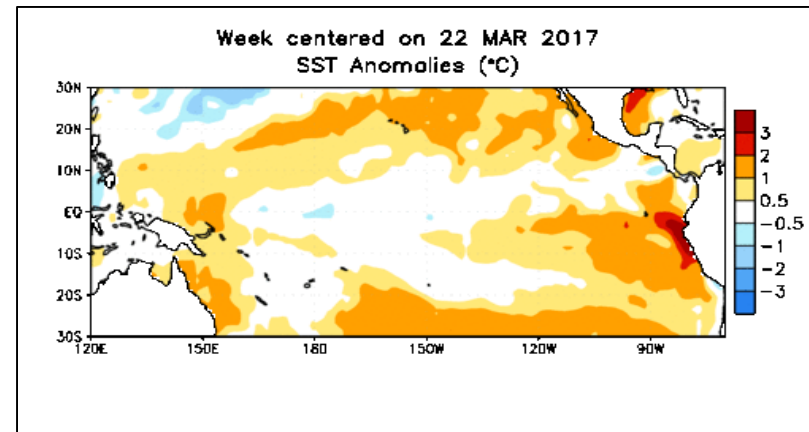
## Early 3-Class Forecast Calls For:

- 54% for Above, 15% Below, and 31% for Normal temperatures during the Monsoon.
- Equal 33.3% chances for above, normal, or below average rainfall during the Monsoon.
- Forecasts averaged across 3-months! Unfortunately, tells us little about what to expect each month, week, etc.



# What's Going on with ENSO?

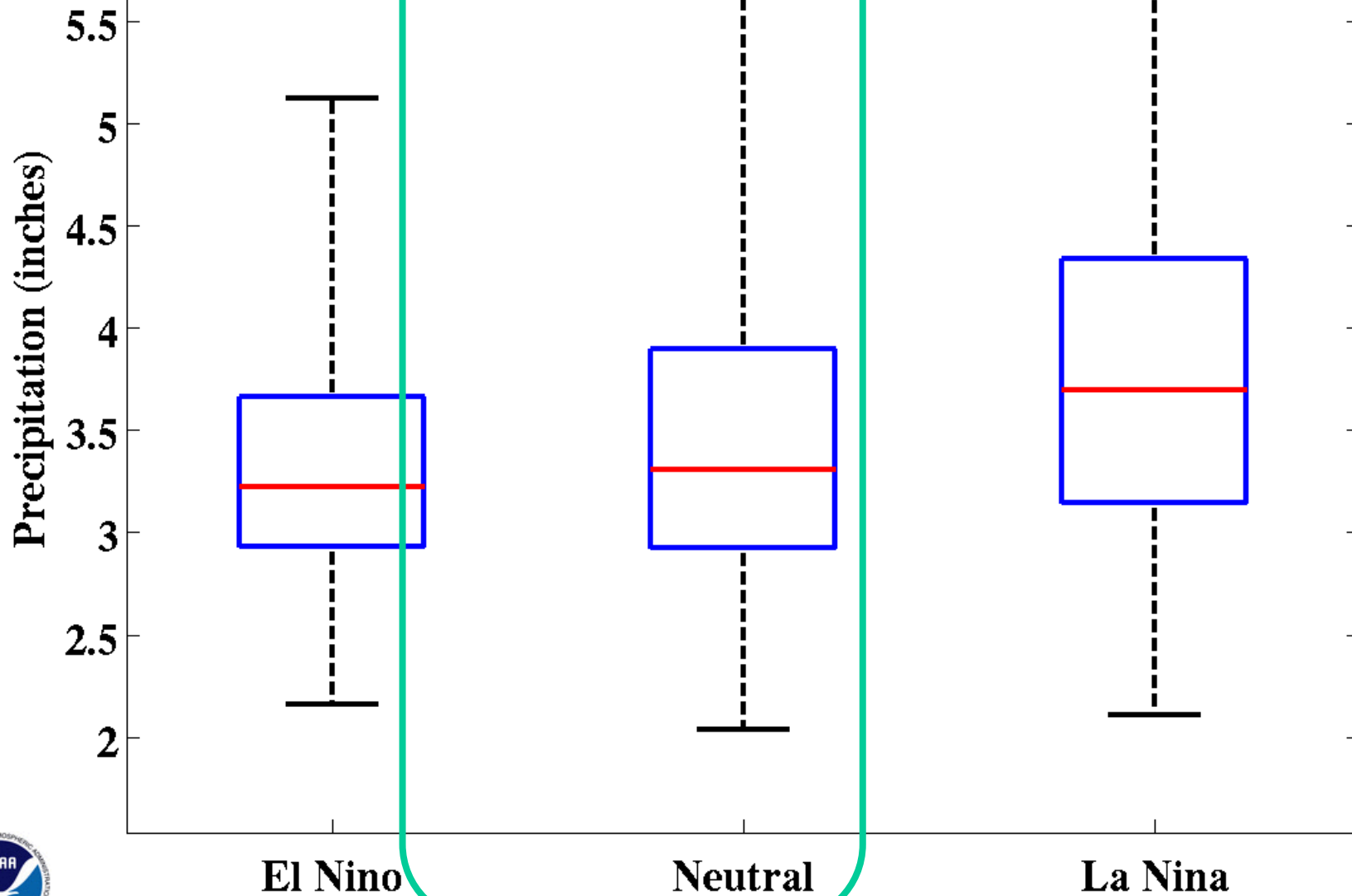
- Currently in Neutral phase. Possible transition into El Niño during Summer/Fall seasons.
- ENSO climate signal much weaker in summer, meaning other weather drivers more important across AZ.



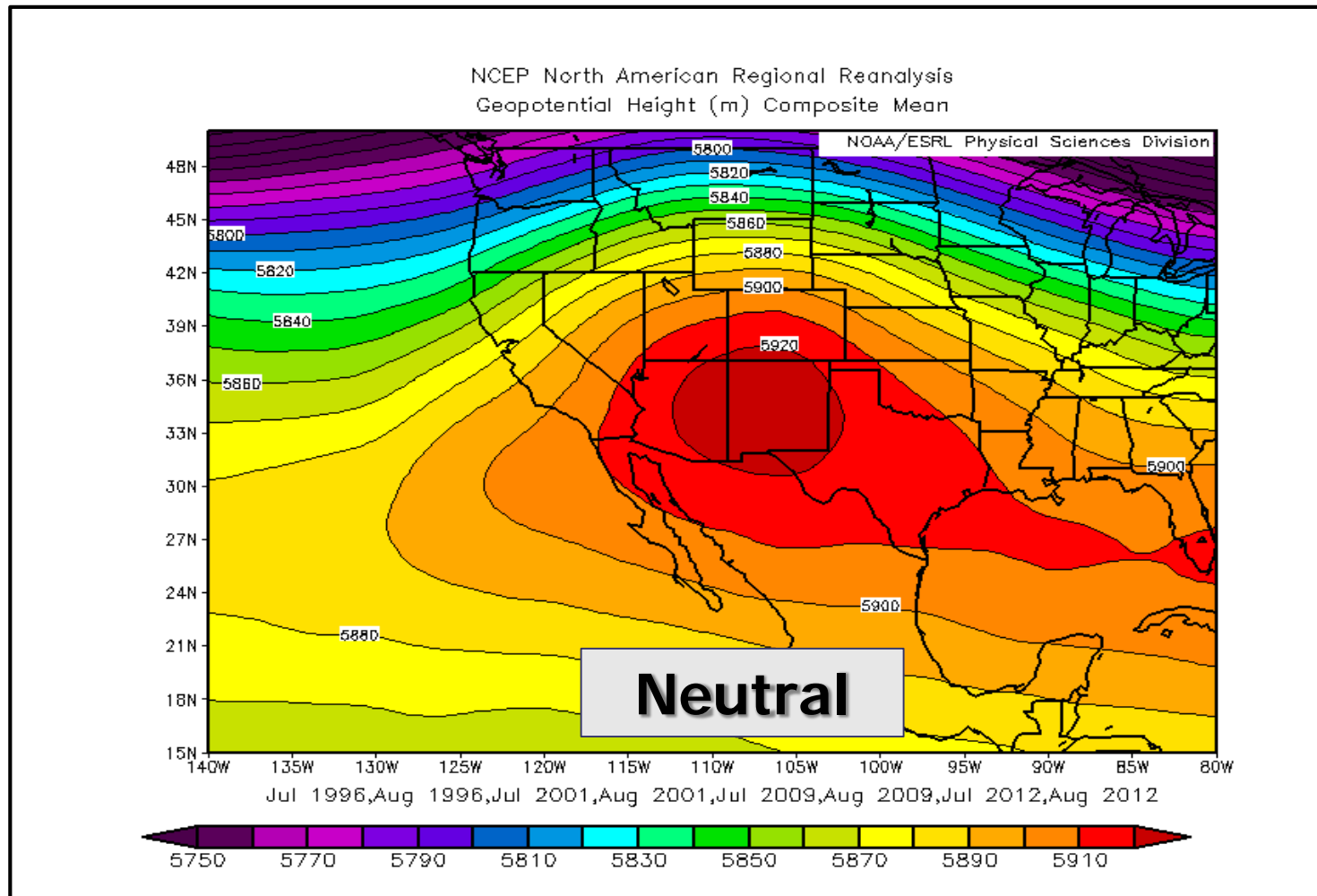




## JAS Precipitation Distribution for Climate Div. #096

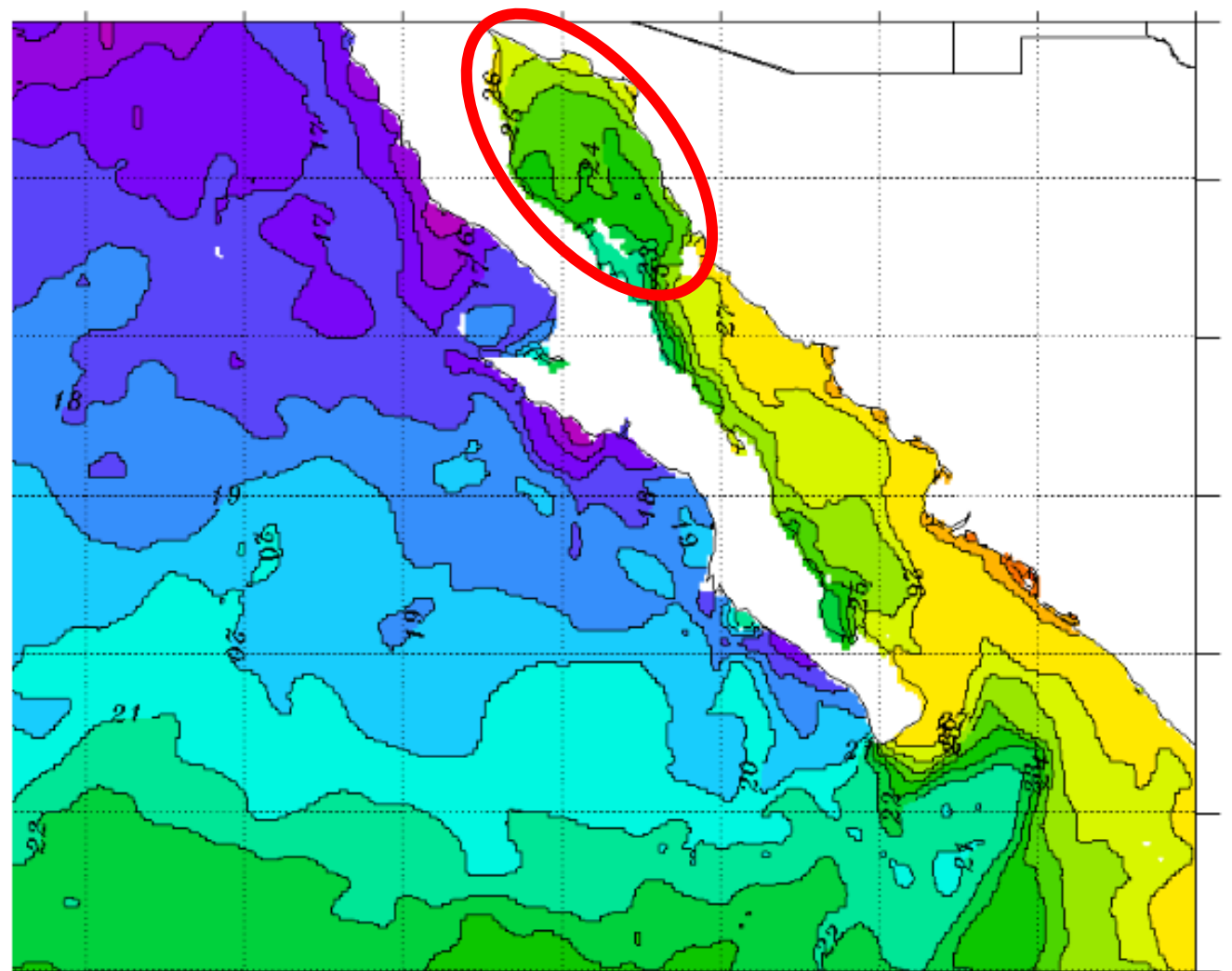
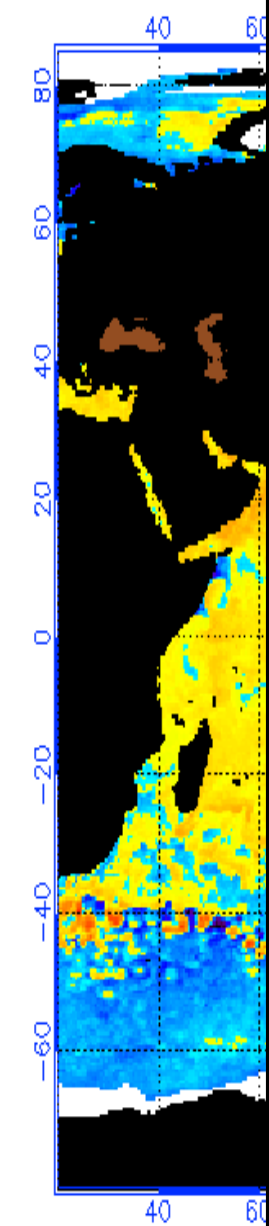


# Monsoon Ridge Variability





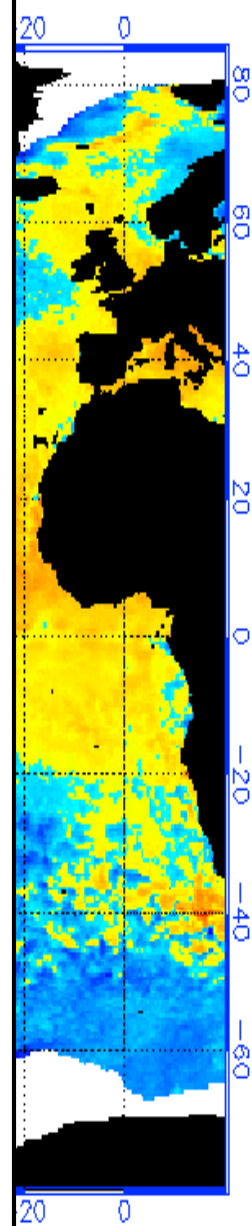
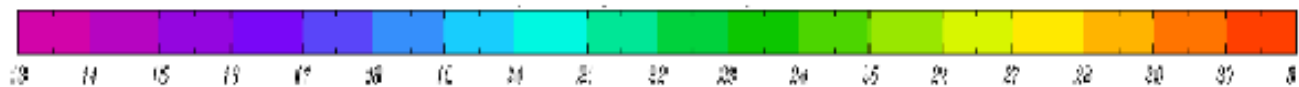
NOAA/NESDIS GEO-POLAR BLENDED 5 km SST ANALYSIS  
FOR THE GULF OF CALIFORNIA



-120 -118 -116 -114 -112 -110 -108 -106

10 JUNE 2017

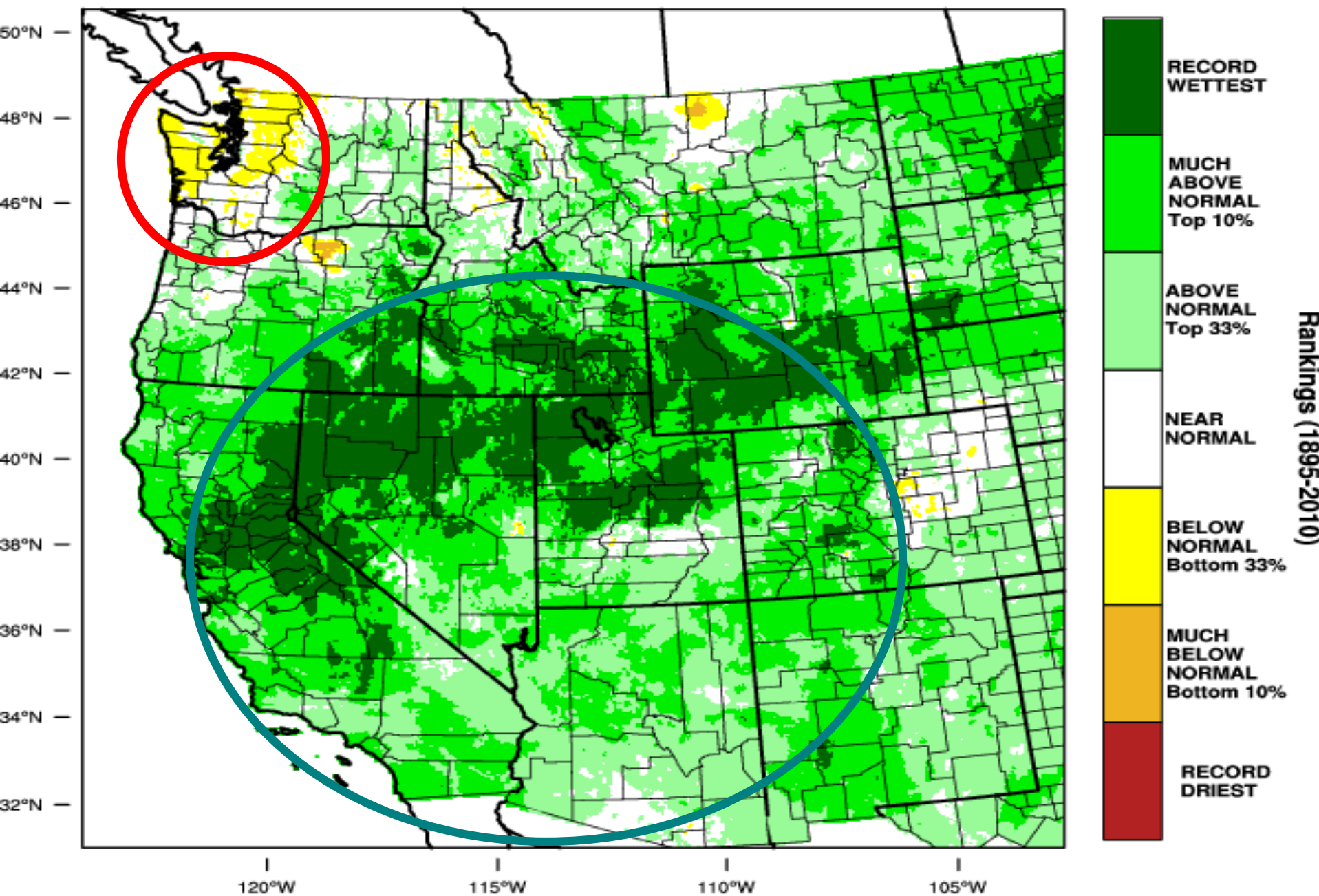
sea surface temperature in degrees Celsius





# Western United States - Precipitation

December-February 2017 Percentile





# East Pacific Hurricane Outlook

*Courtesy of NOAA's National Hurricane Center*

2017: Normal to Above Normal Season

14-20 Named Storms  
Average Year: 15

6-11 Hurricanes  
Average Year: 8

3-7 Major Hurricanes  
Average Year: 4

2016: Very Active with 21 NS, 13 H, 7 MH

# Final Thoughts

- NOAA/CPC forecast: above normal temperatures; equal chances for above, below, normal precipitation... *"Go Fish"*
- Complex forecast; predictive factors lend toward seeing a late onset and drier than normal start to the Monsoon. Tropical systems, the main wild card for the 2<sup>nd</sup> half of the Monsoon.
- Remember, It only takes one or two heavy rain events to reach historical Monsoon rainfall quota!
- Any location in the Phoenix Valley is subject to flooding/flash flooding problems if enough rain falls in the proper duration.
- Now is the time to prepare! Lots of information available.

# Thank You!

## Questions...?



September 14<sup>th</sup>, 2015 Henz, D.



[DanielHenz@mail.maricopa.gov](mailto:DanielHenz@mail.maricopa.gov)



[www.fcd.maricopa.gov](http://www.fcd.maricopa.gov)



[@FCDFloodInfo](https://twitter.com/FCDFloodInfo)



[www.facebook.com/FCDMaricopa](https://www.facebook.com/FCDMaricopa)



# **Comments from the Chief Engineer and General Manager**





# **Summary of Recent Actions By the Board of Directors**



**Denny Barney**  
District 1  
- **Chairman** -



**Steve Chucri**  
District 2



**Bill Gates**  
District 3



**Clint L. Hickman**  
District 4



**Steve Gallardo**  
District 5



# **Other Business and Comments from the Public**

